FIG. 1

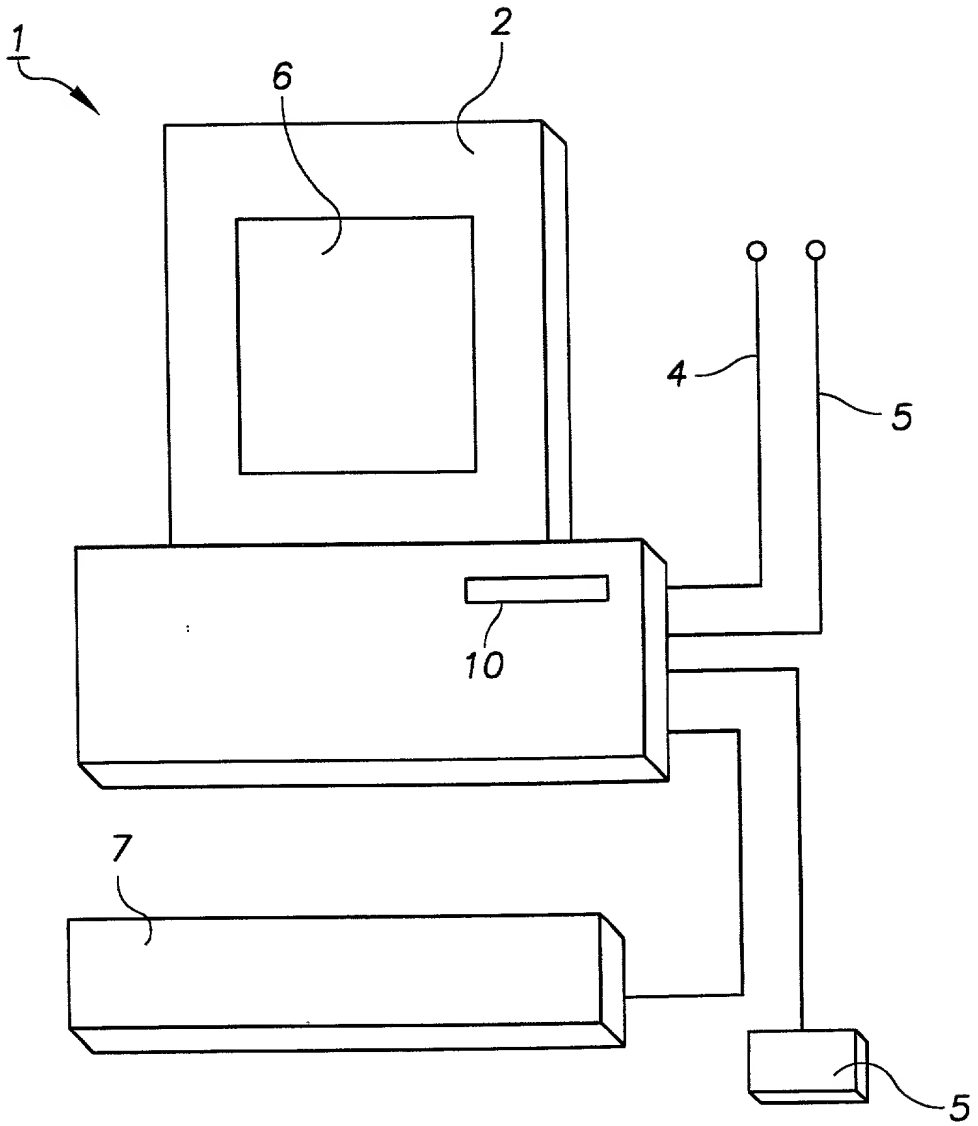


FIG.2

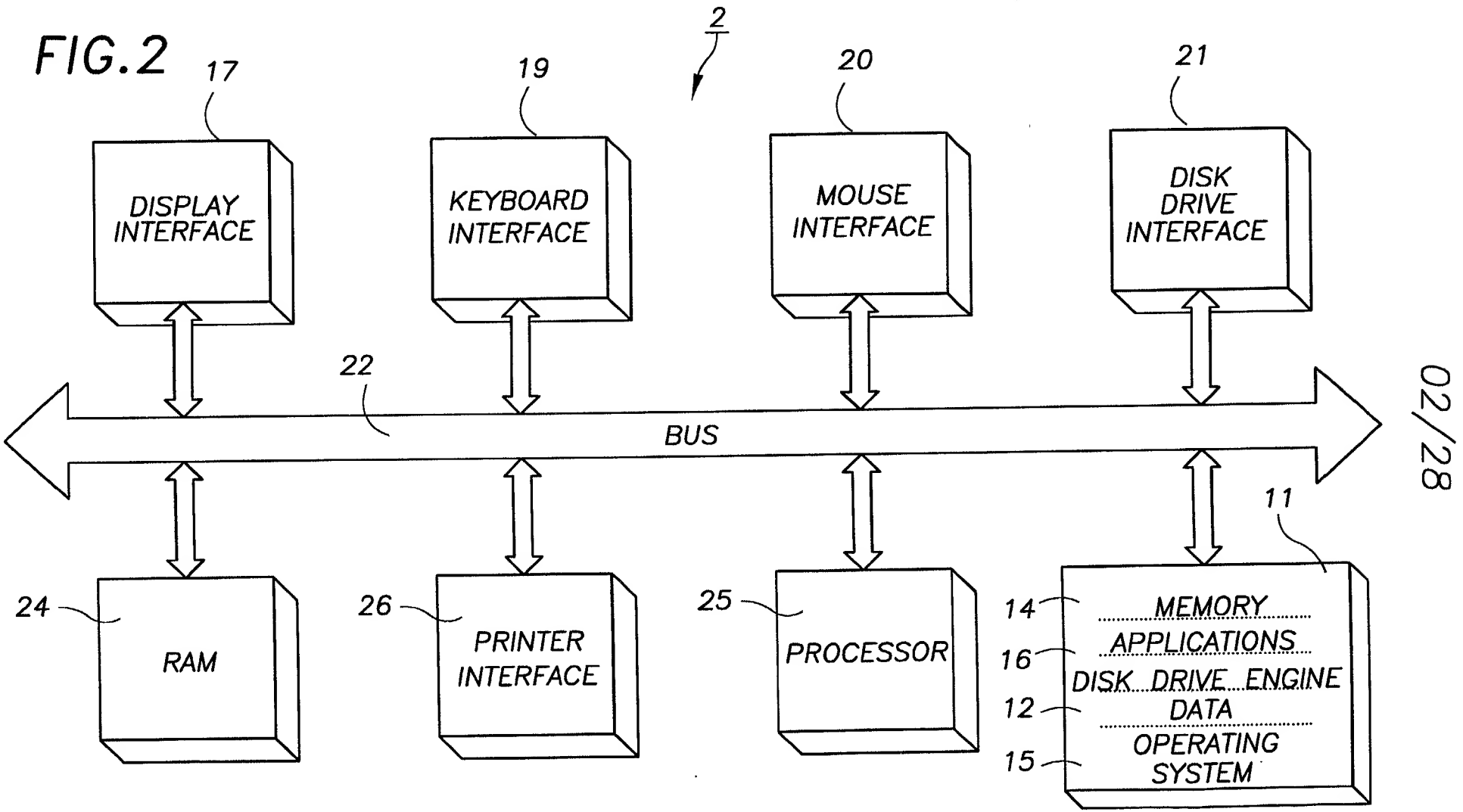


FIG.3

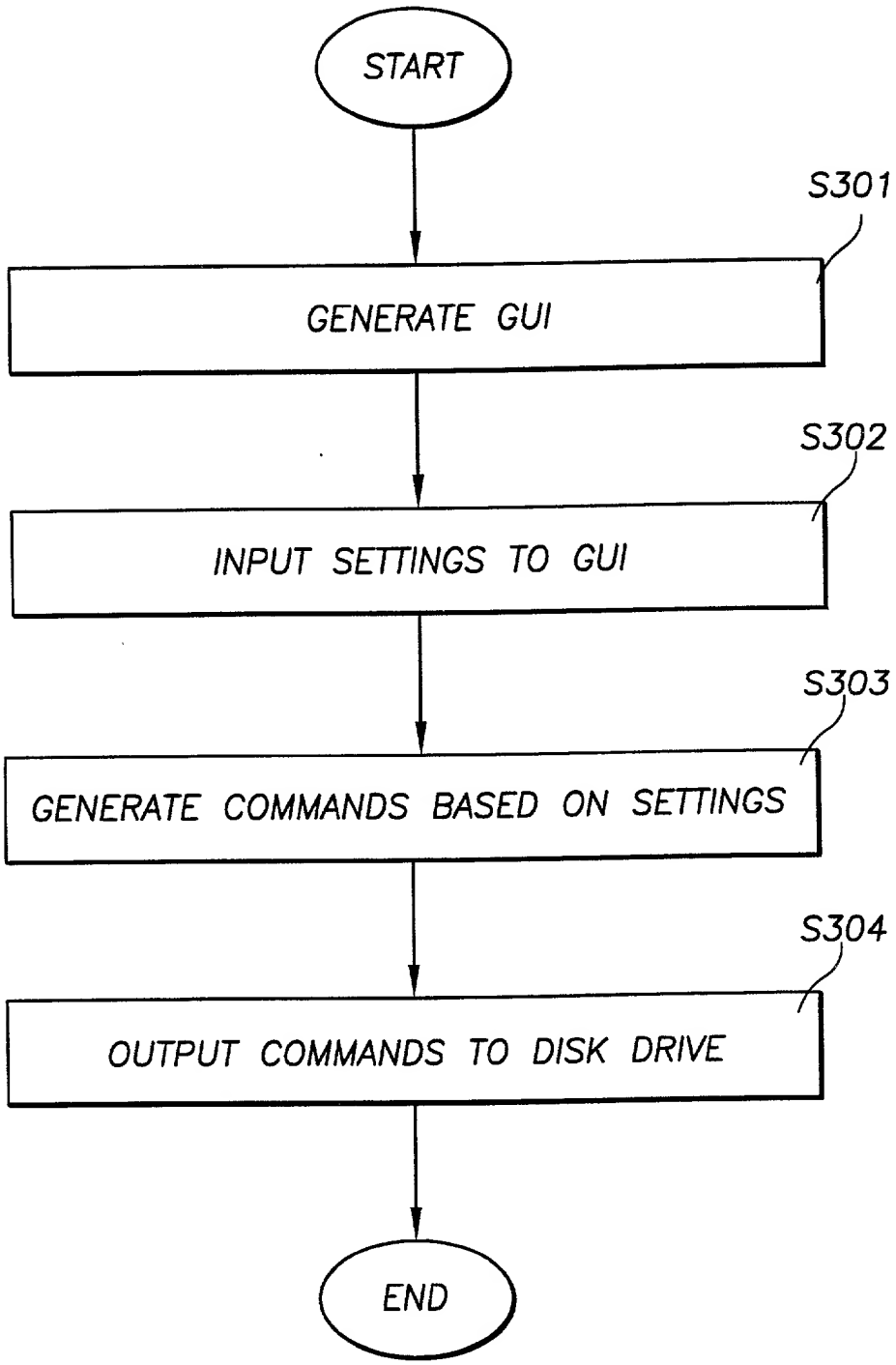

START
S301
GENERATE GUI
S302
INPUT SETTINGS TO GUI
S303
GENERATE COMMANDS BASED ON SETTINGS
S304
OUTPUT COMMANDS TO DISK DRIVE
END

FIG. 4

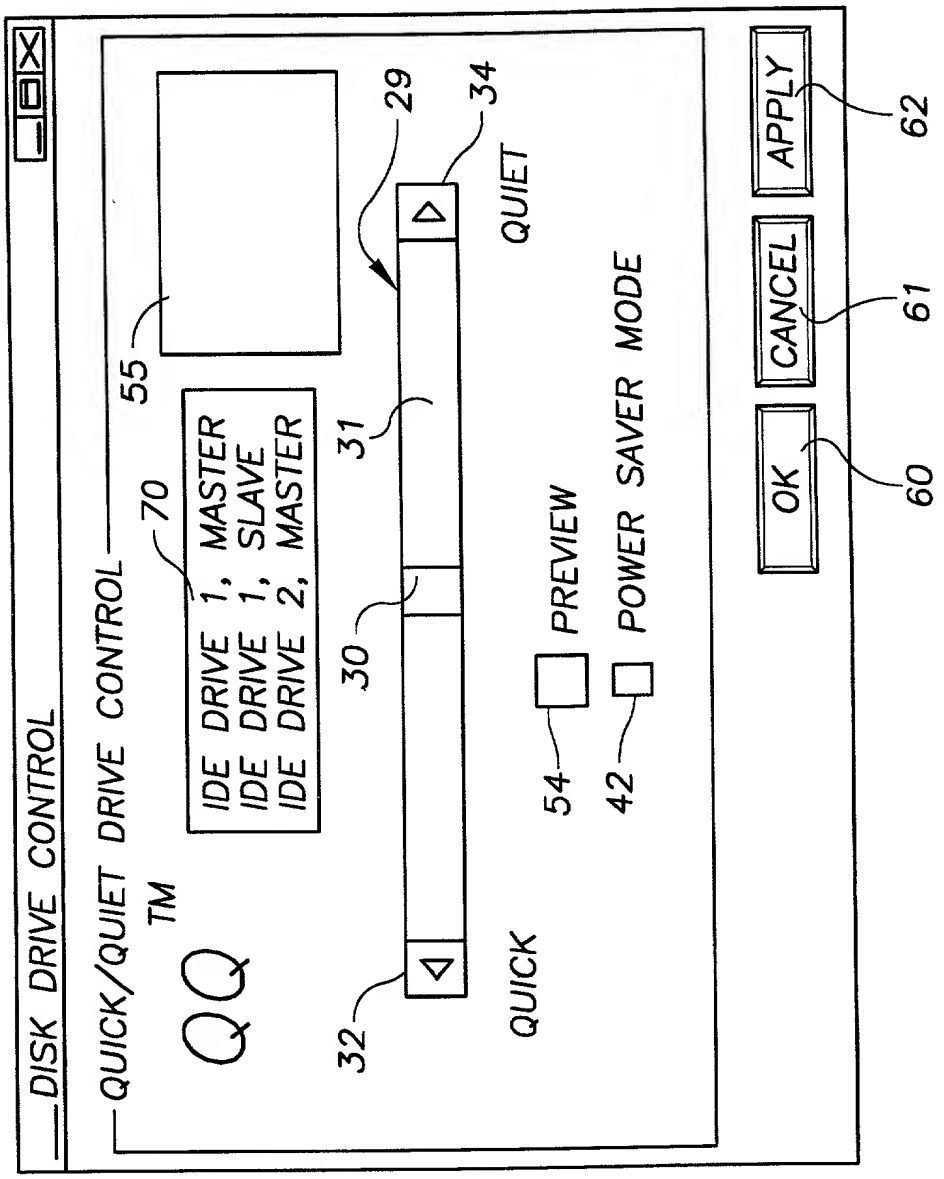

27
DISK DRIVE CONTROL
QUICK/QUIET DRIVE CONTROL
TM
QQ
70
IDE DRIVE 1, MASTER
IDE DRIVE 1, SLAVE
IDE DRIVE 2, MASTER
55
29
34
31
30
32
QUIET
QUICK
PREVIEW
POWER SAVER MODE
54
42
OK
CANCEL
APPLY
60
61
62

FIG.5

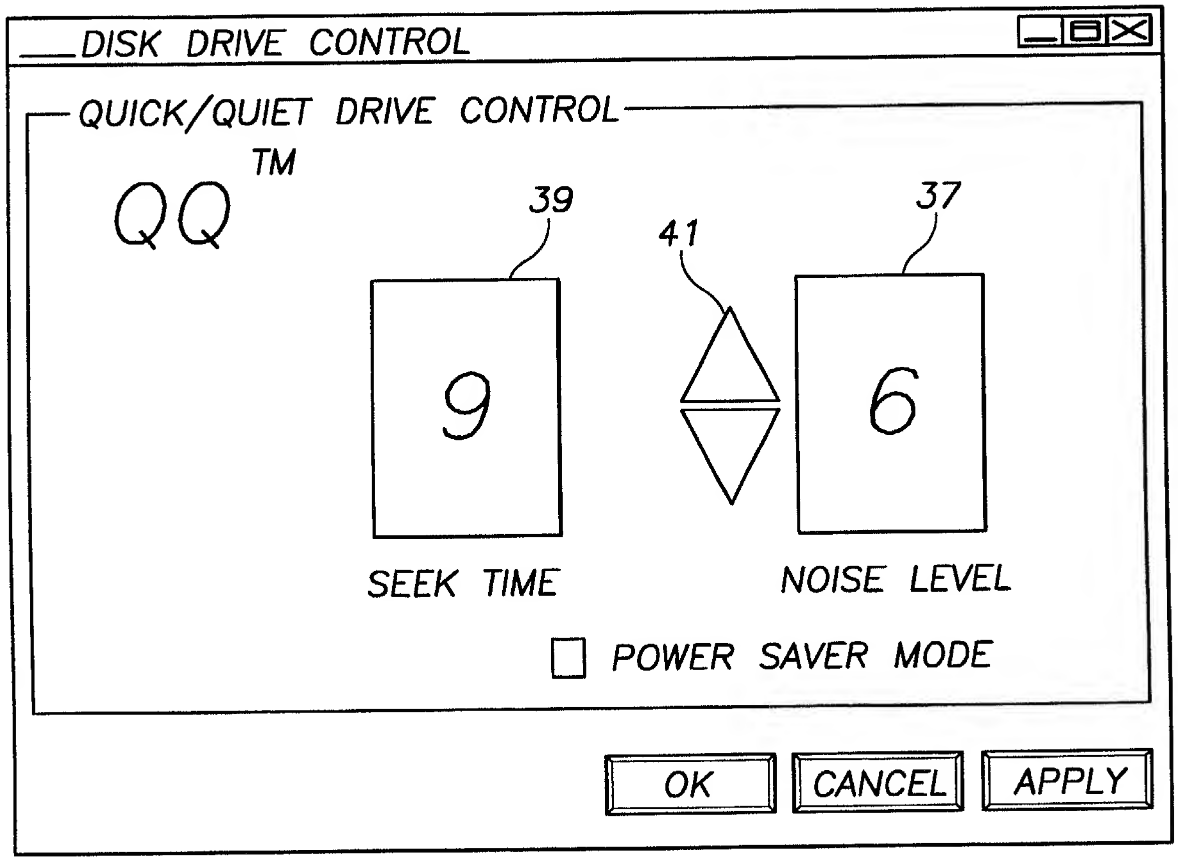
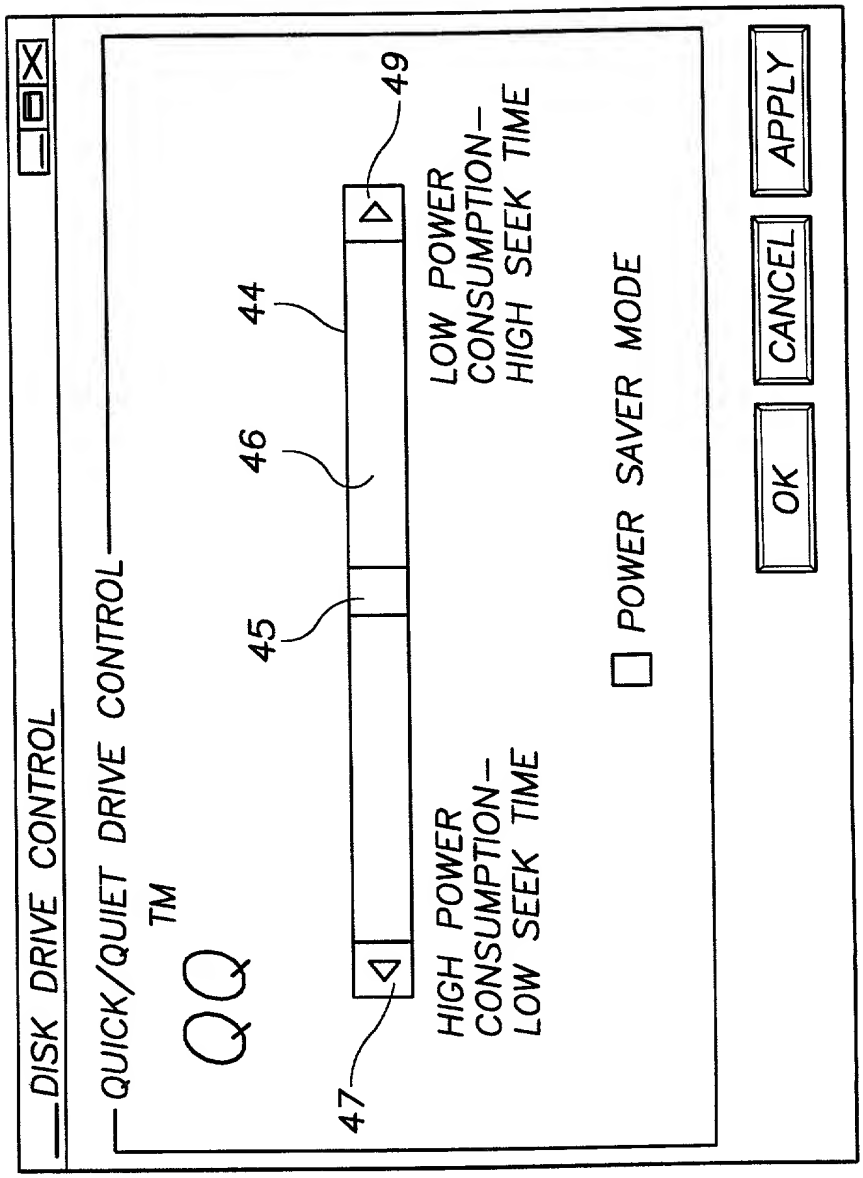

DISK DRIVE CONTROL
QUICK/QUIET DRIVE CONTROL
QQ TM
39
41
37
9
6
SEEK TIME
NOISE LEVEL
POWER SAVER MODE
OK
CANCEL
APPLY

FIG.6


DISK DRIVE CONTROL
QUICK/QUIET DRIVE CONTROL
QQ
TM
45
46
44
49
47
HIGH POWER CONSUMPTION– LOW SEEK TIME
LOW POWER CONSUMPTION– HIGH SEEK TIME
POWER SAVER MODE
OK
CANCEL
APPLY

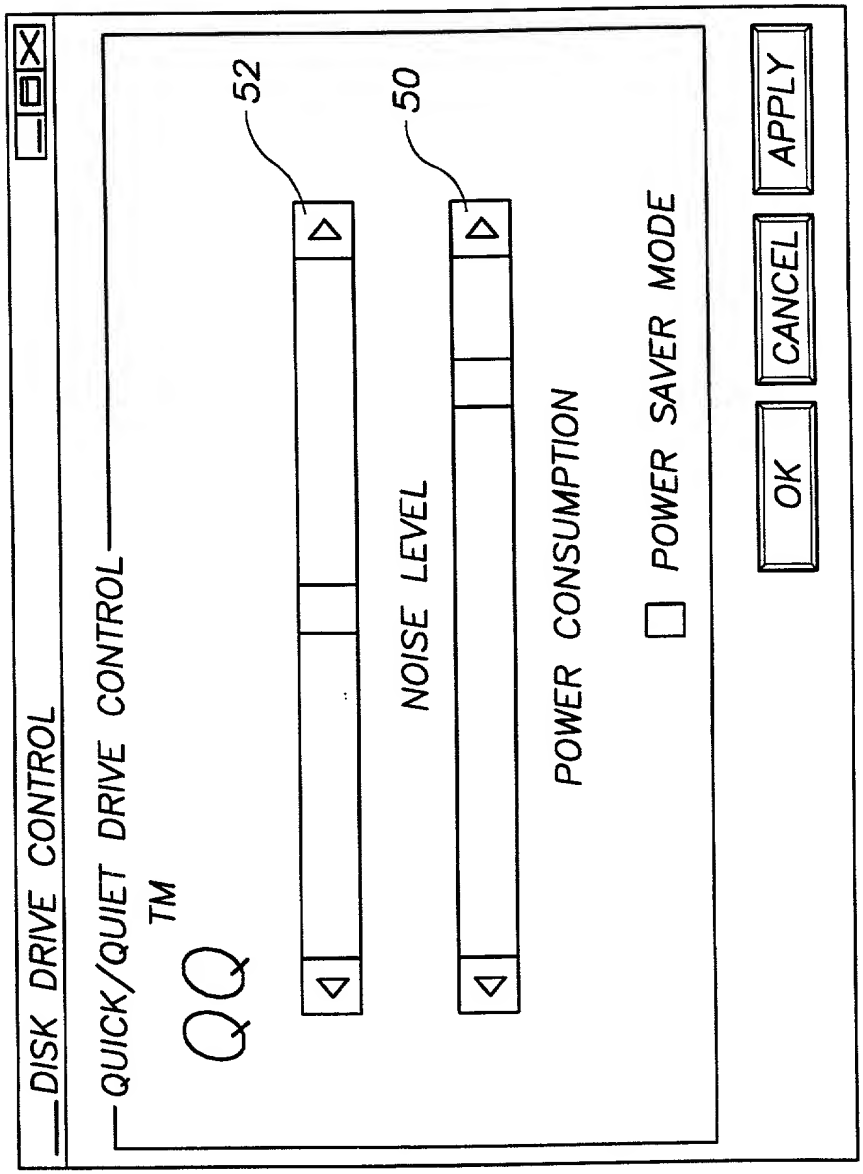

DISK DRIVE CONTROL
QUICK/QUIET DRIVE CONTROL
QQ TM
52
50
NOISE LEVEL
POWER CONSUMPTION
POWER SAVER MODE
OK
CANCEL
APPLY

FIG. 7

FIG.8

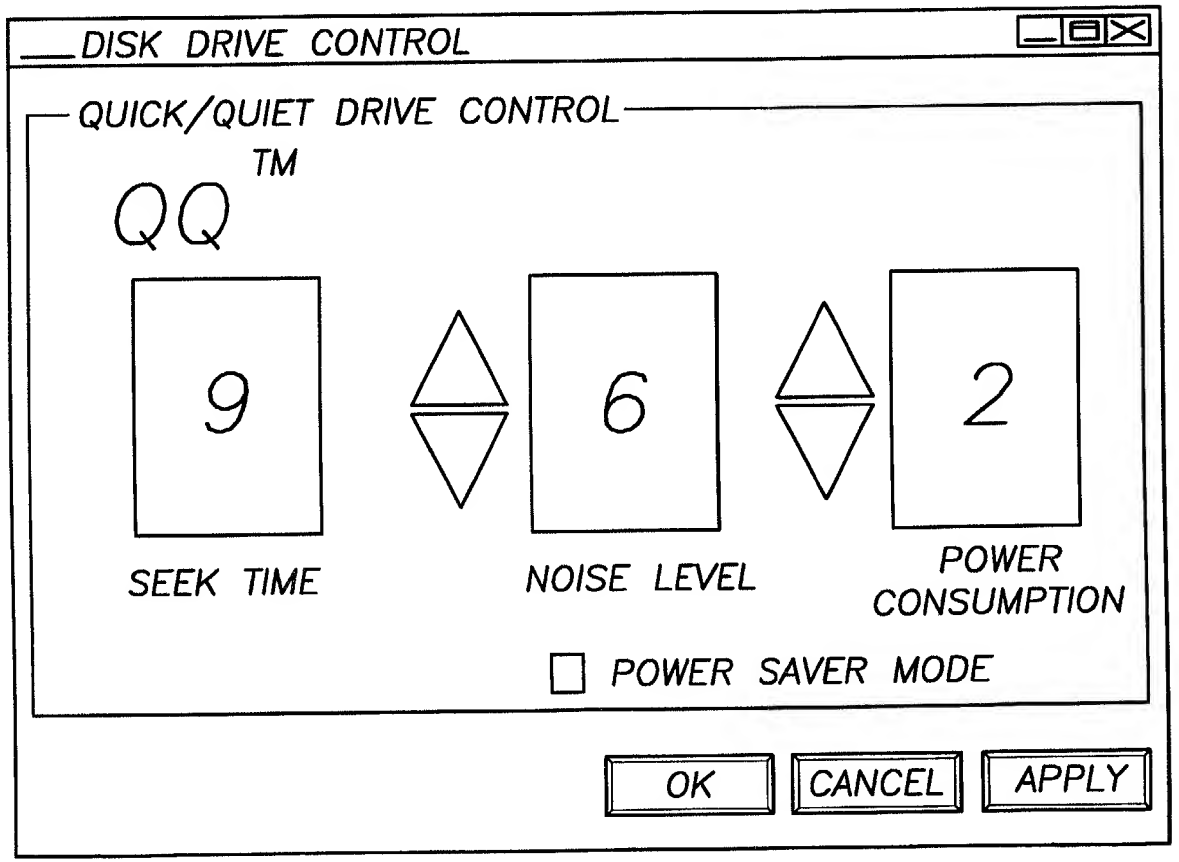
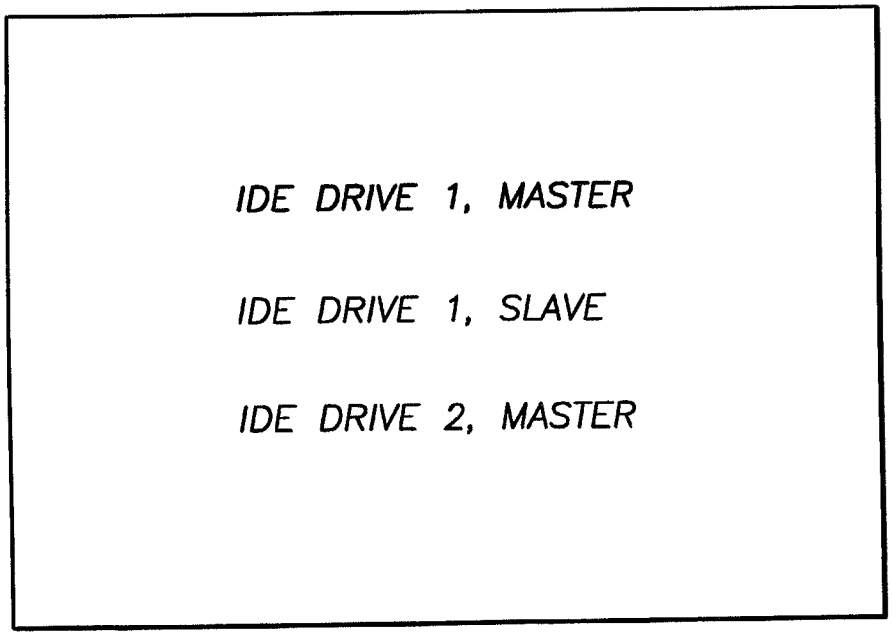


FIG.9



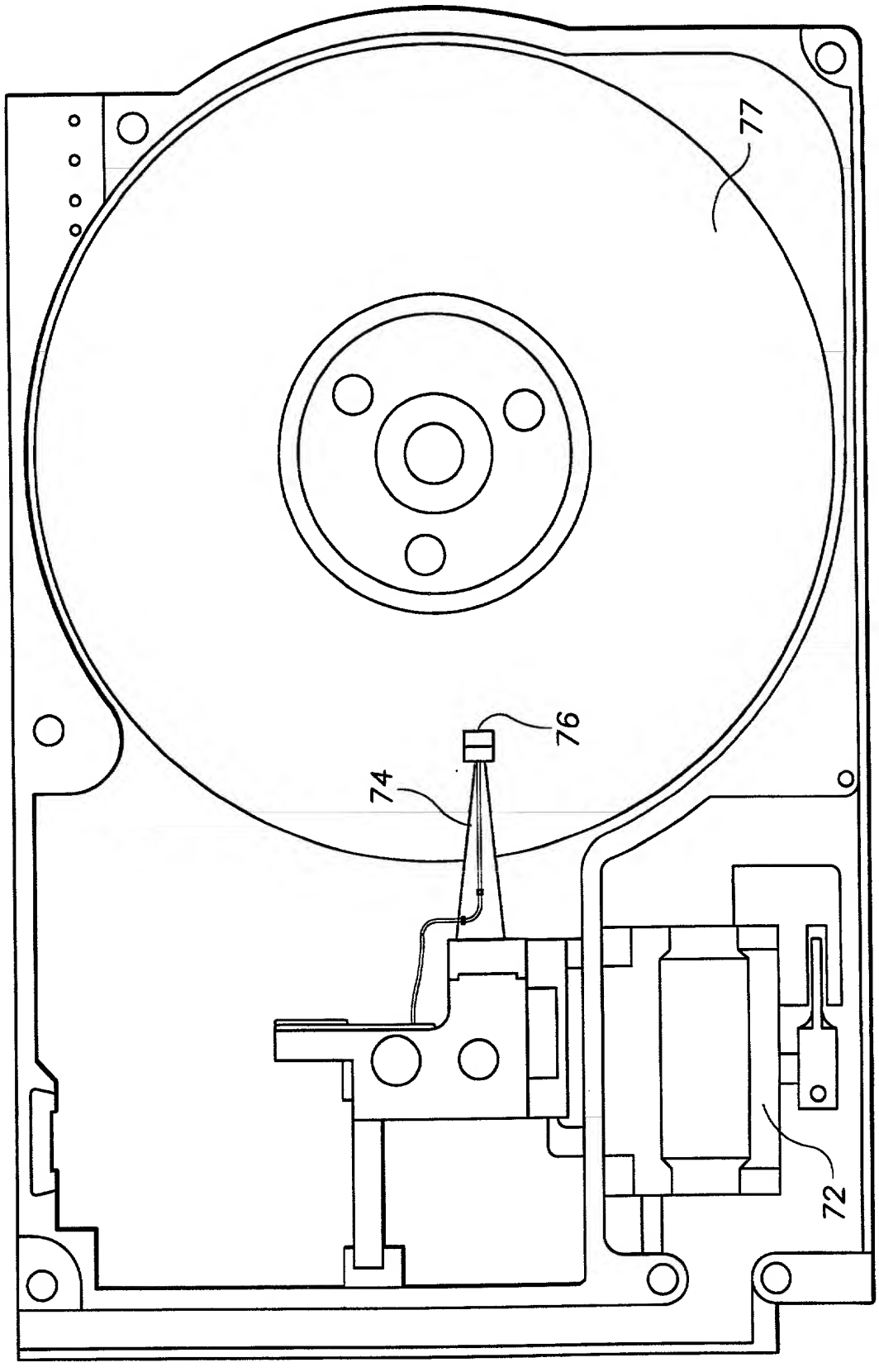


FIG. 10A

FIG. 10B

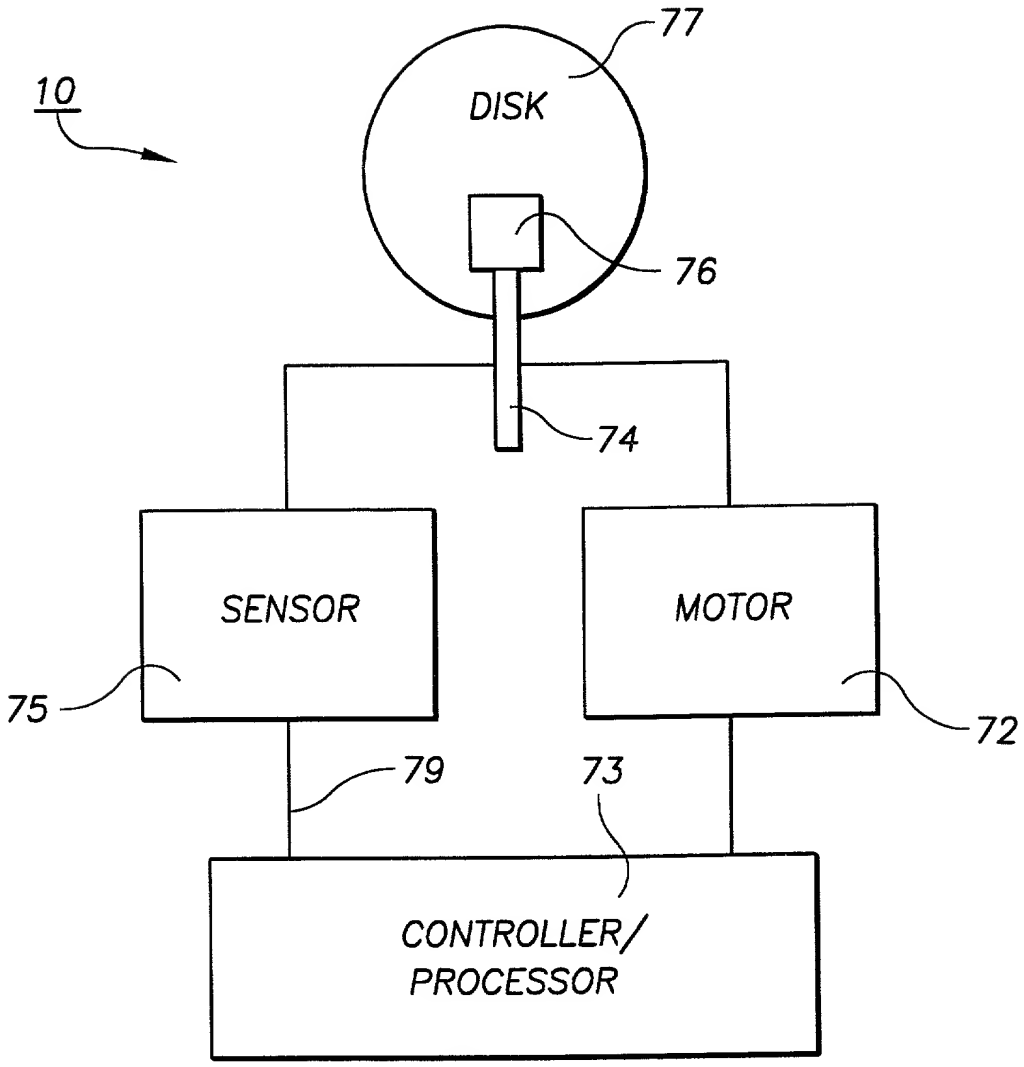

10
77
DISK
76
74
SENSOR
MOTOR
75
72
79
73
CONTROLLER/
PROCESSOR

FIG. 11

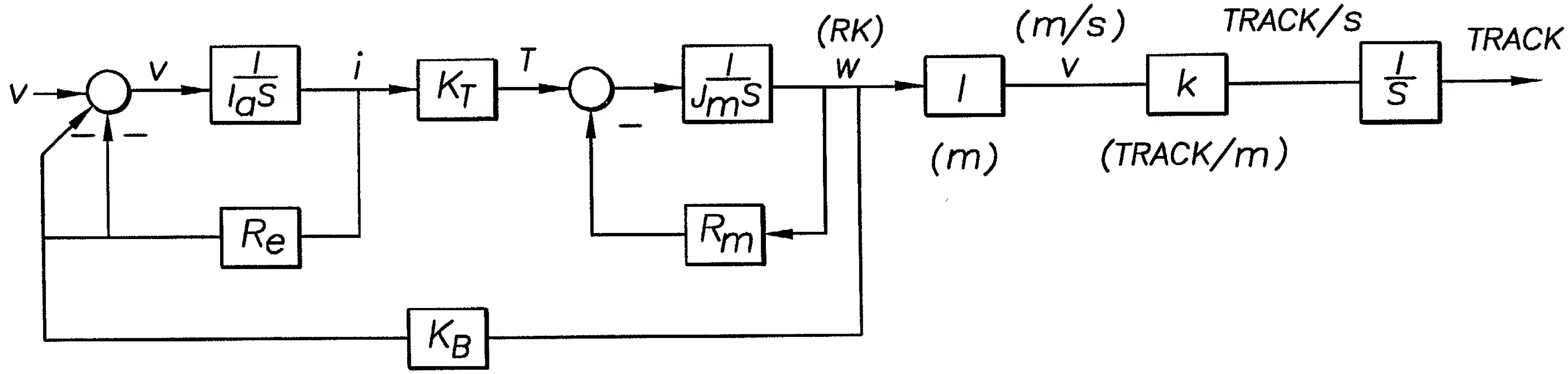


FIG. 12

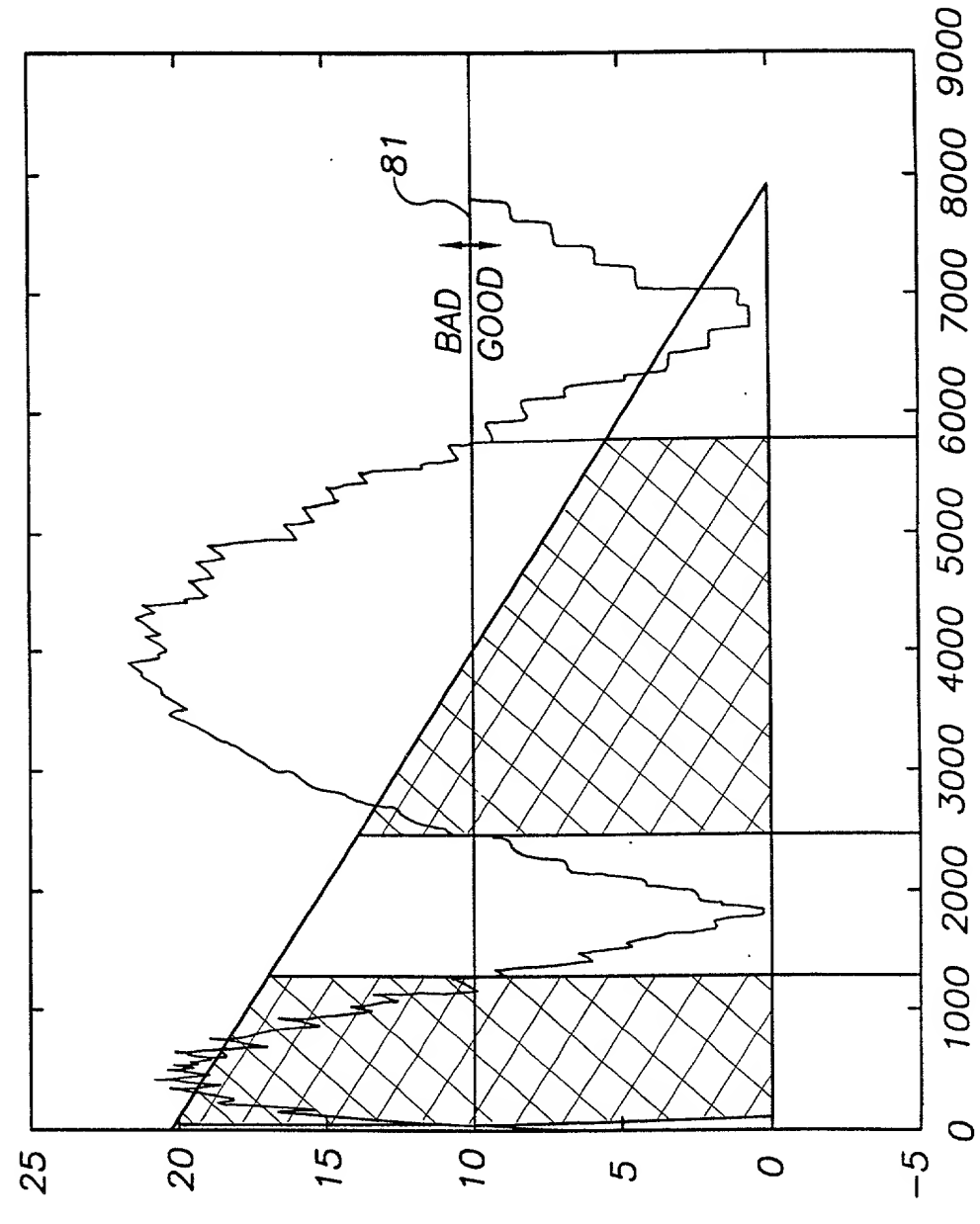

81
BAD
GOOD
25
20
15
10
5
0
-5
0
1000
2000
3000
4000
5000
6000
7000
8000
9000
GOODBAD,NMOVES/ 400/2
MOVE DISTANCE (TRACKS)

FIG. 13
PRIOR ART

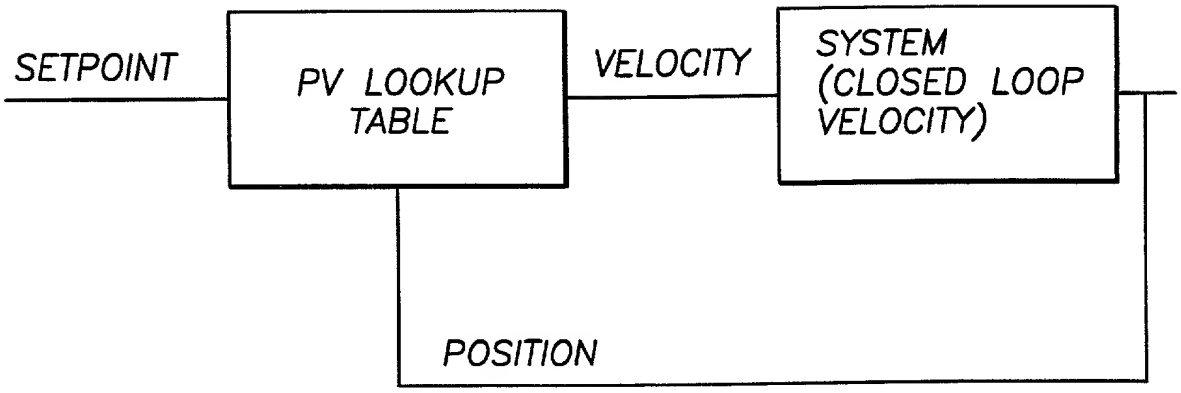


FIG. 14

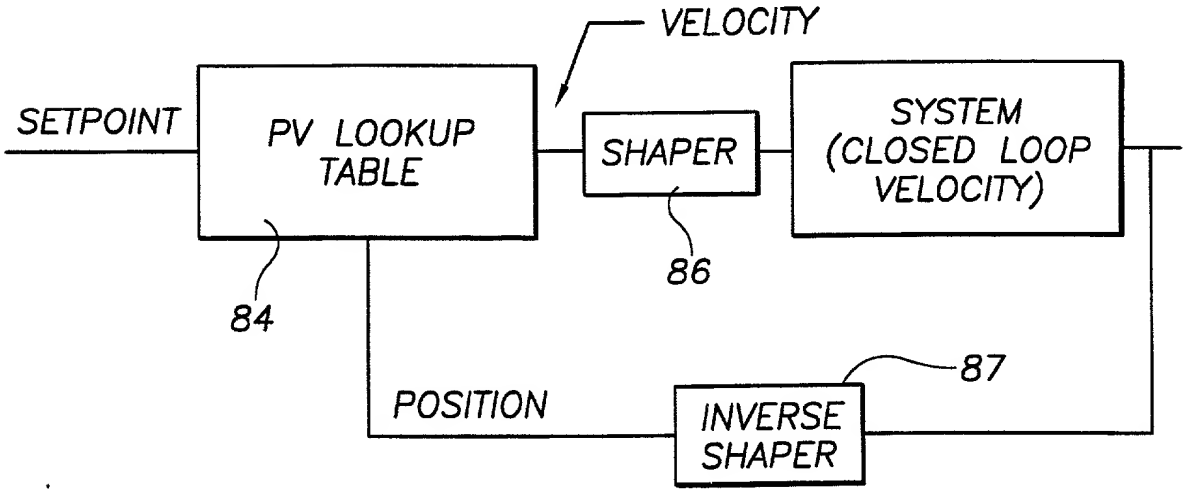


FIG. 15

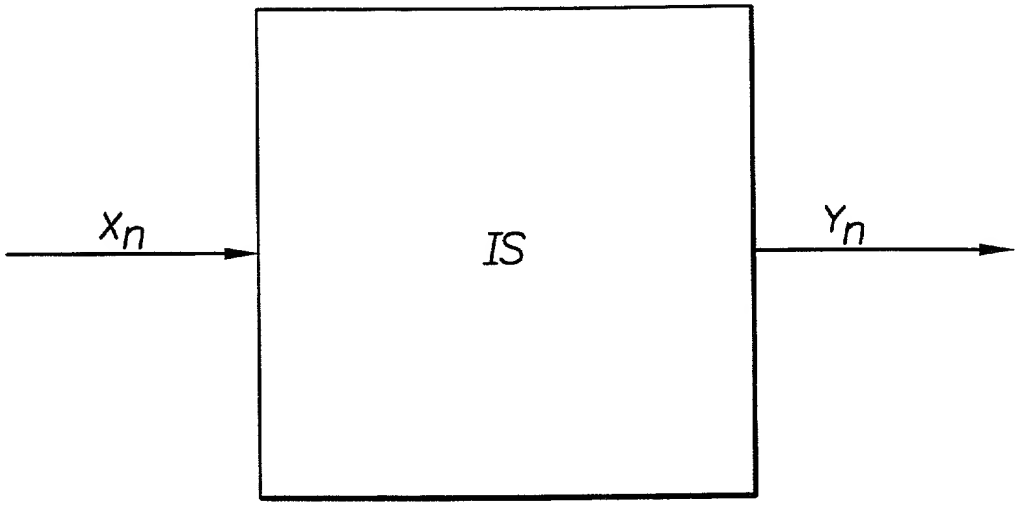


FIG. 16

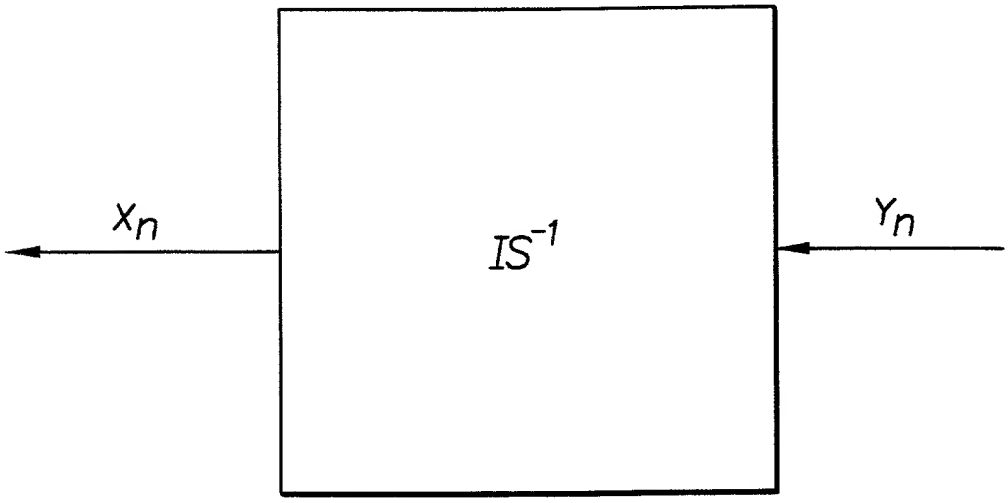


FIG. 17

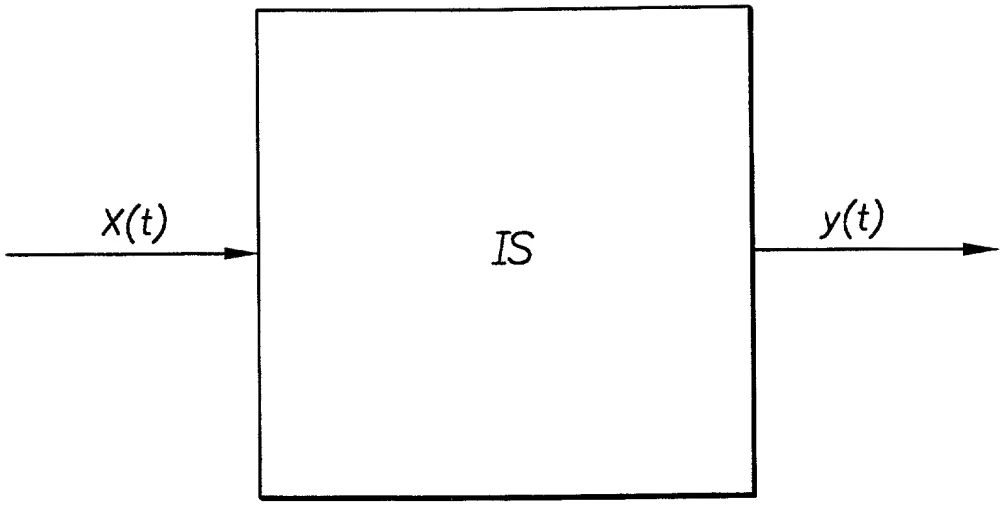


FIG18

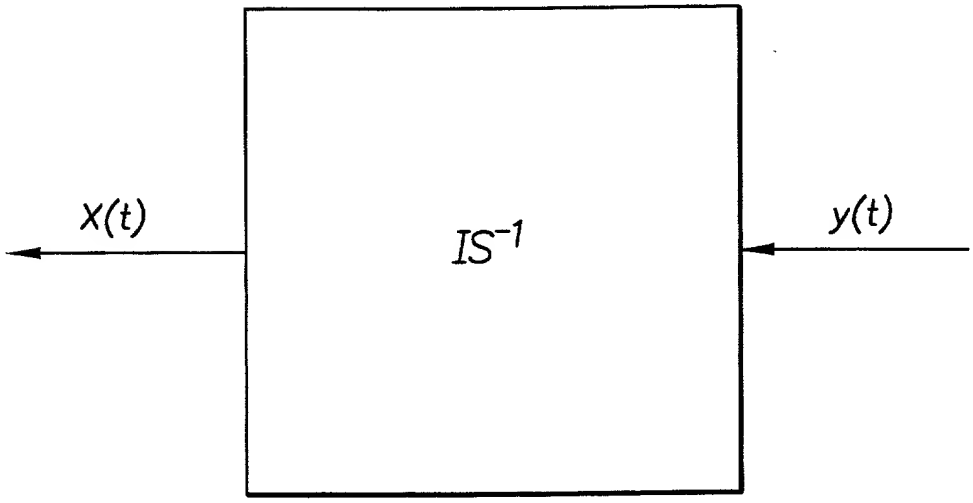


FIG. 19

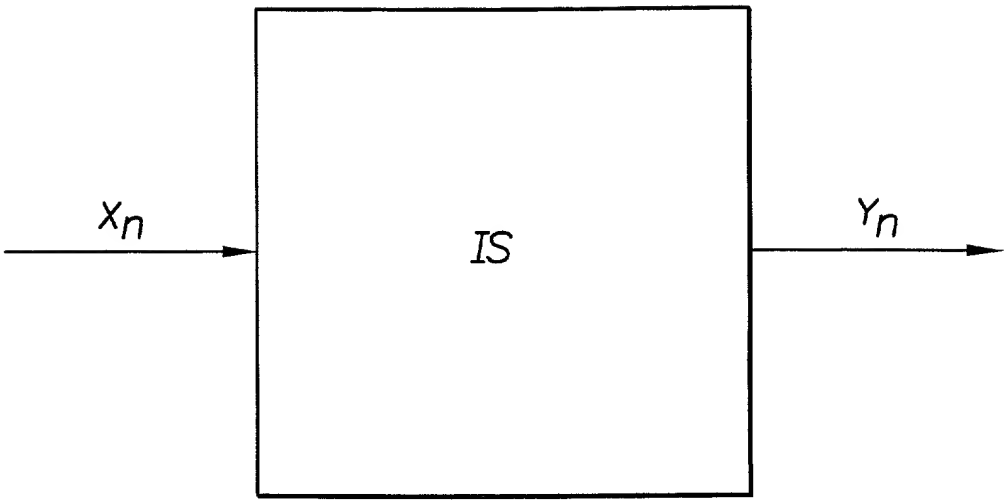


FIG20

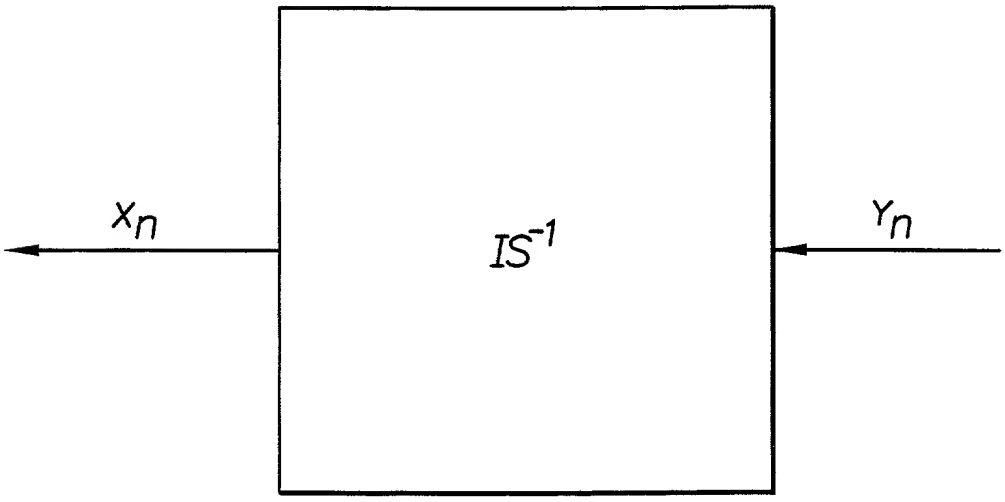


FIG.21

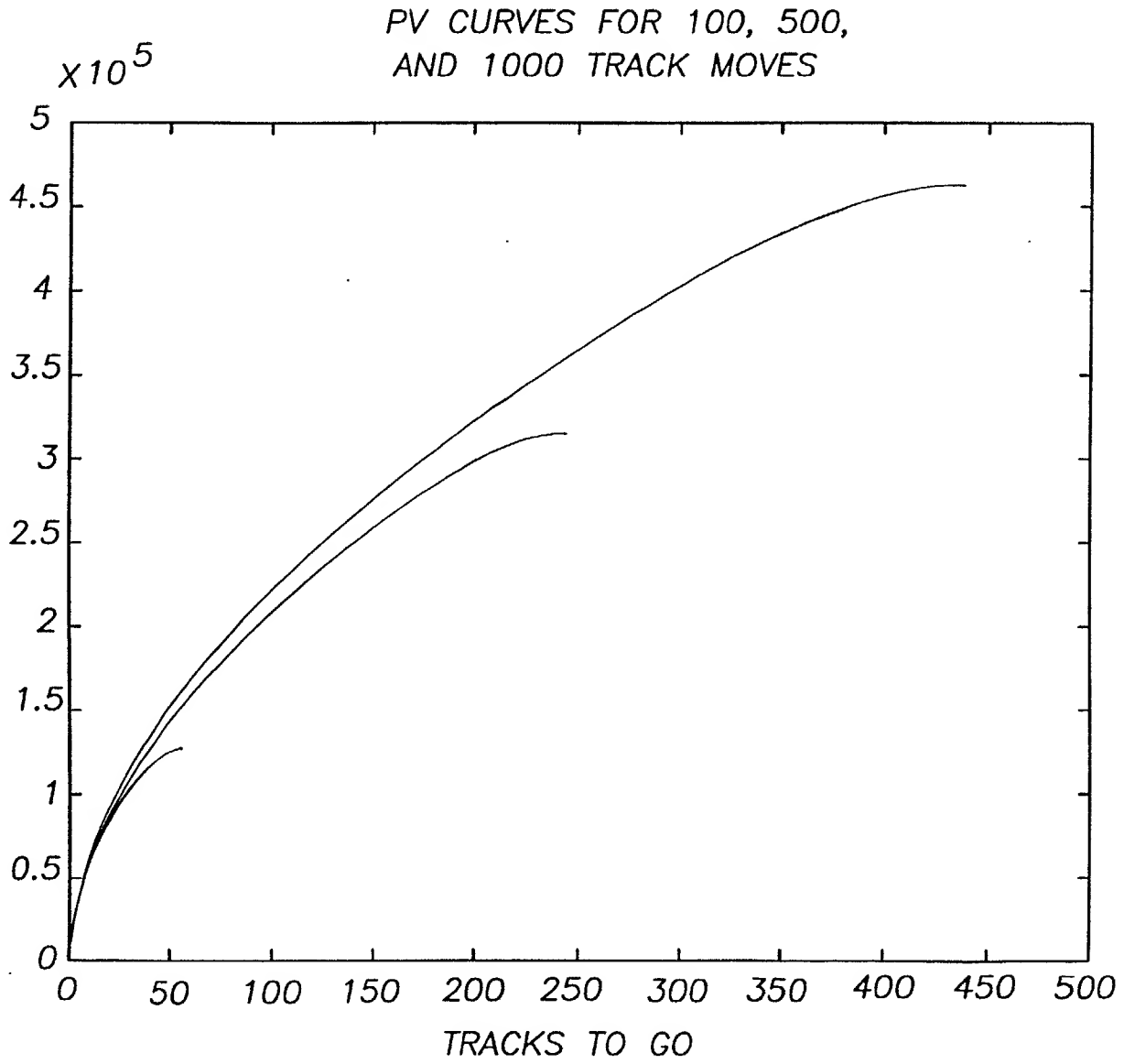
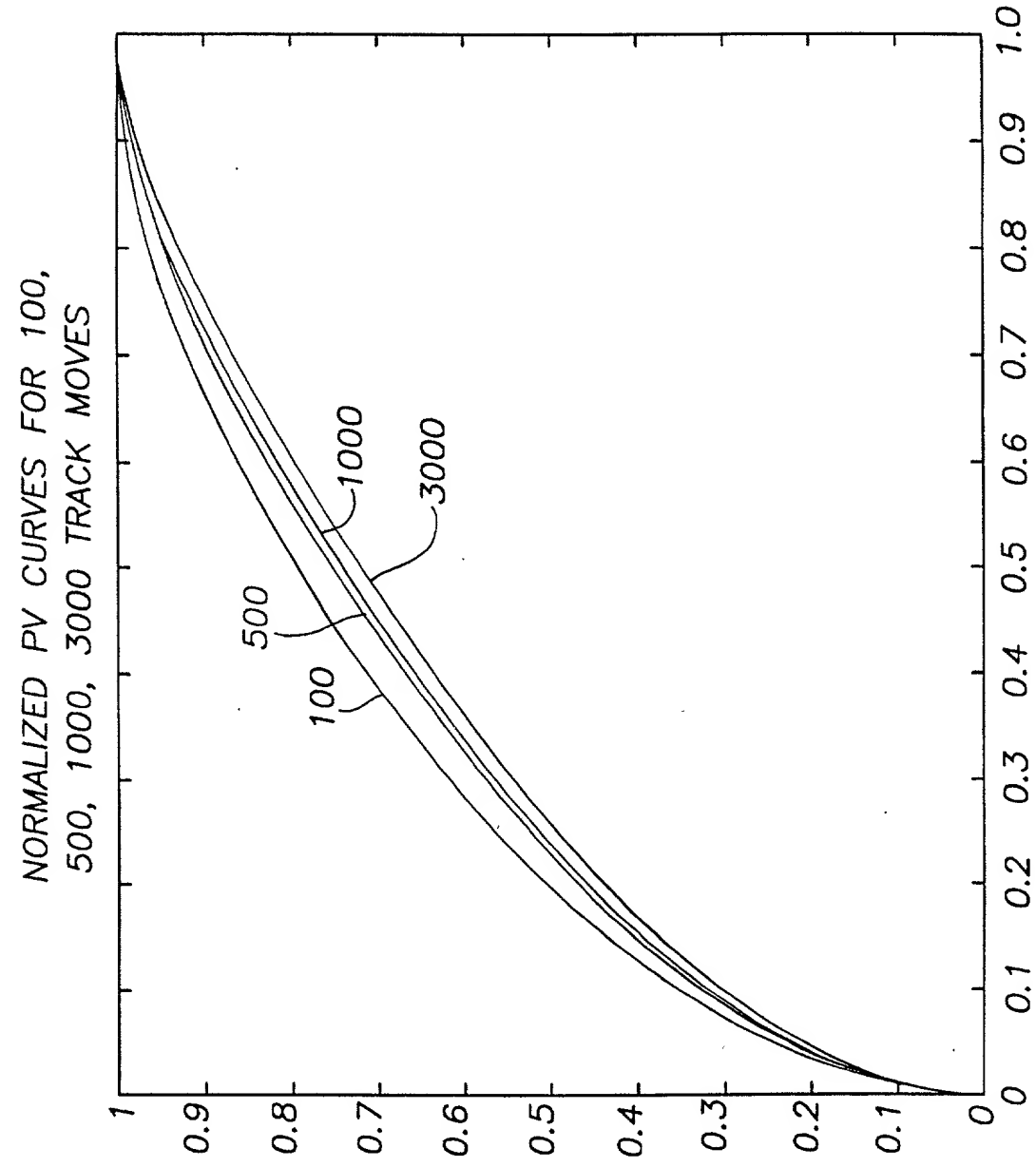


FIG.22


NORMALIZED PV CURVES FOR 100,
500, 1000, 3000 TRACK MOVES
NORMALIZED VELOCITY
COMMAND VC/VCMAX
NORMALIZED POSITION X/XMAX
100
500
1000
3000
0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0

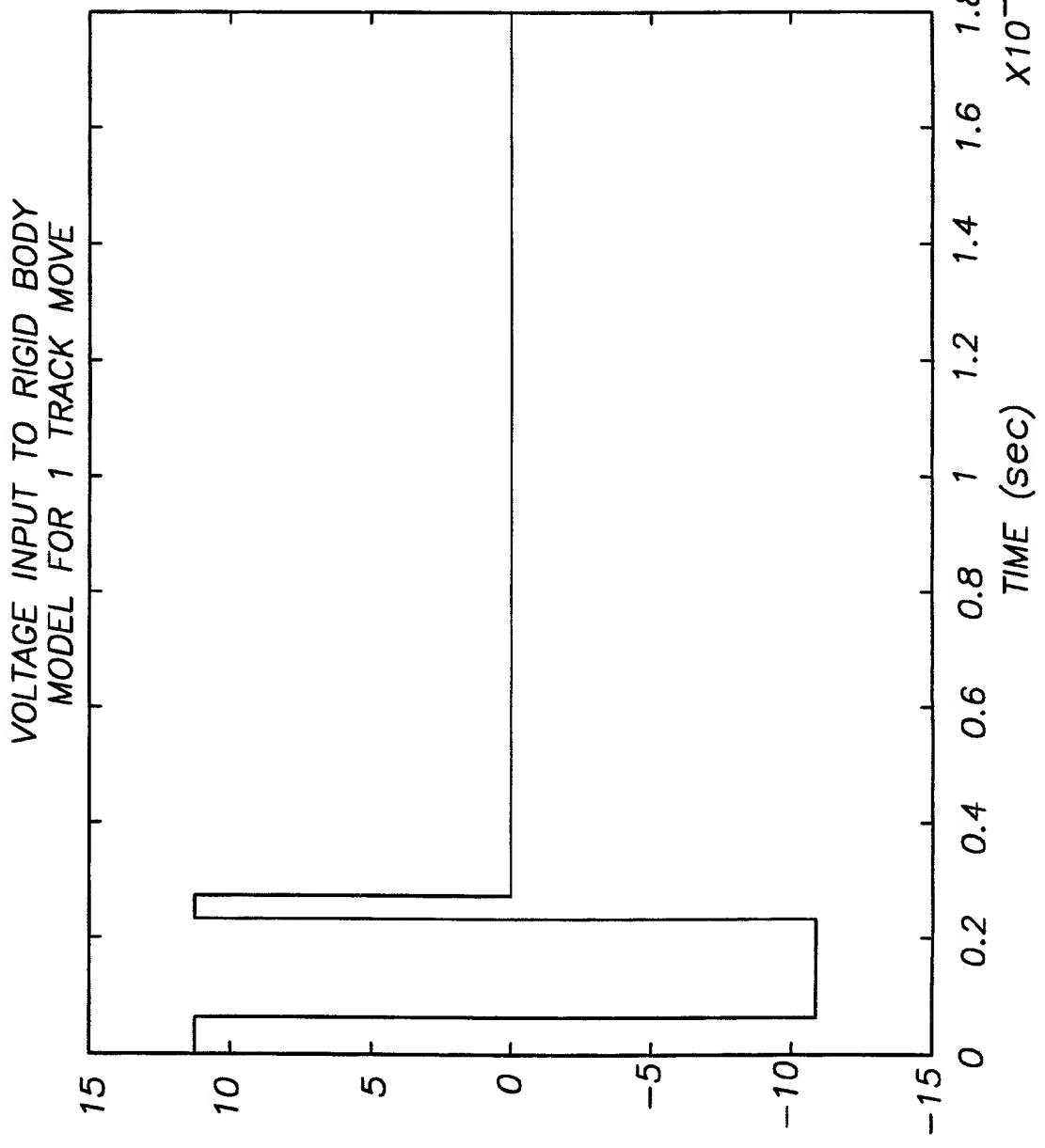

VOLTAGE INPUT TO RIGID BODY
MODEL FOR 1 TRACK MOVE
INPUT VOLTAGE
(VOLTS)
15
10
5
0
−5
−10
−15
0
0.2
0.4
0.6
0.8
1
1.2
1.4
1.6
1.8
TIME (sec)
X10−3

FIG.23A

FIG.23B

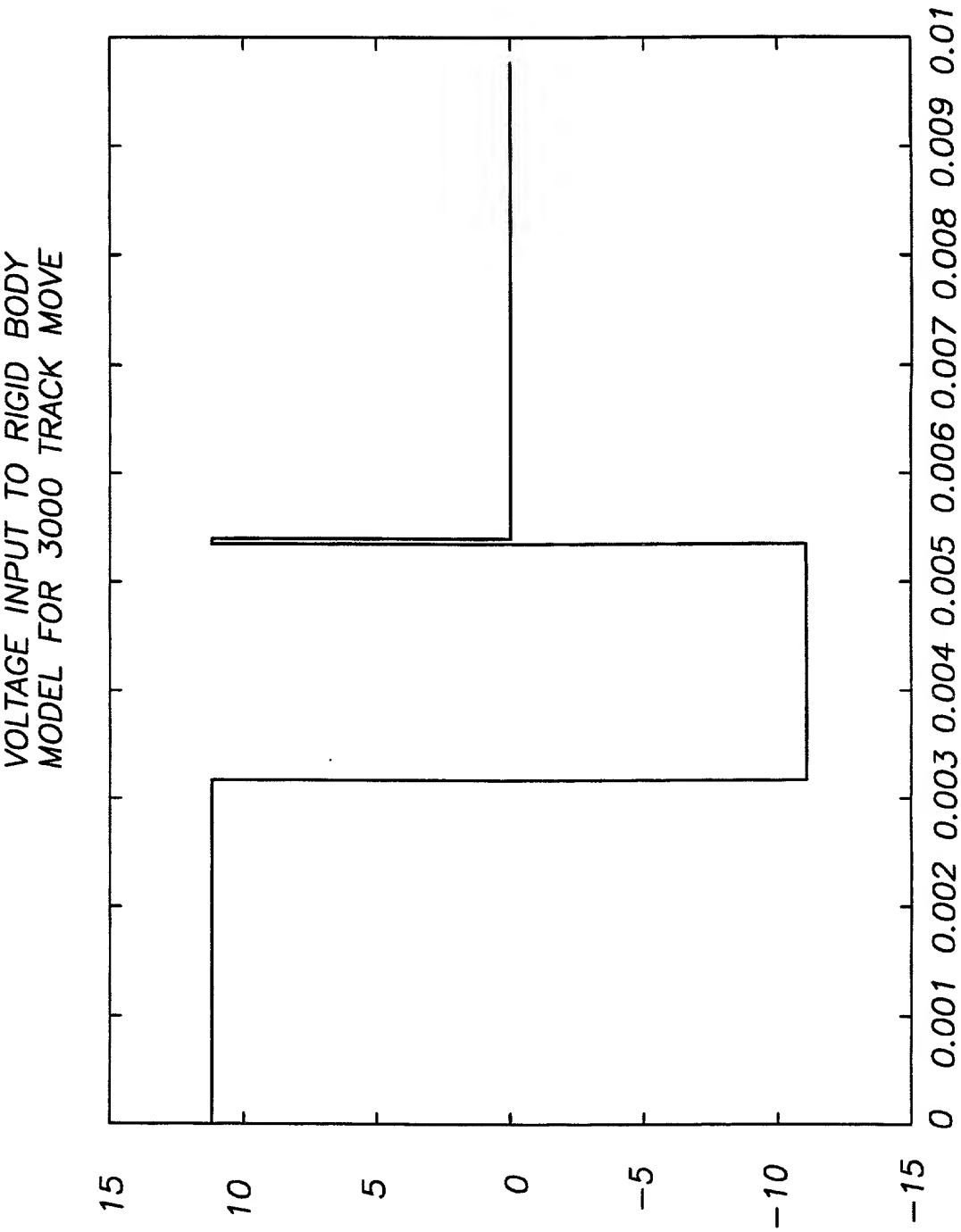

VOLTAGE INPUT TO RIGID BODY
MODEL FOR 3000 TRACK MOVE
INPUT VOLTAGE (VOLTS)
15
10
5
0
-5
-10
-15
0
0.001
0.002
0.003
0.004
0.005
0.006
0.007
0.008
0.009
0.01
TIME (sec)

FIG.24

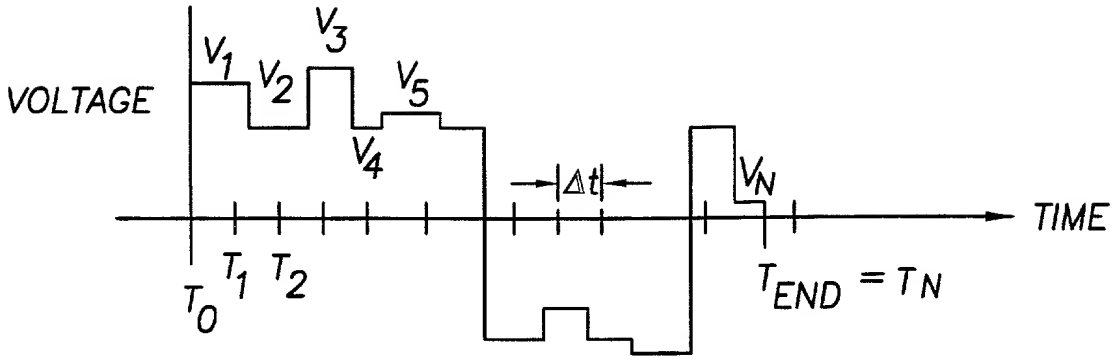


FIG.25

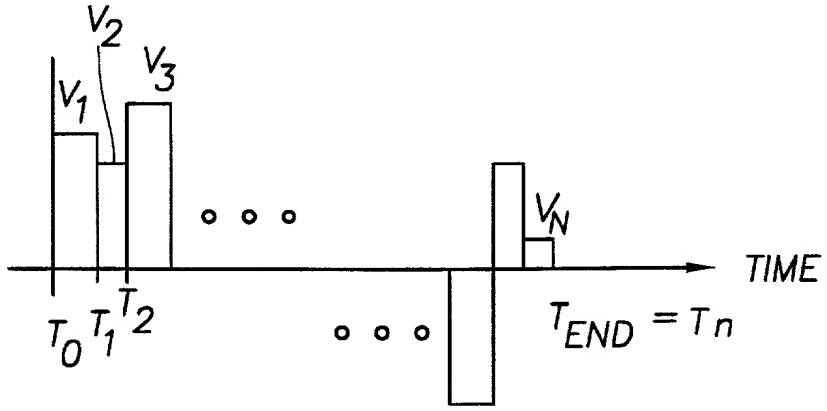


FIG.26

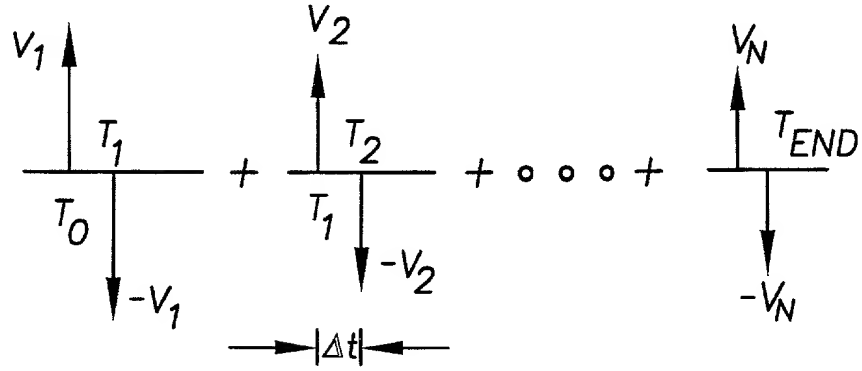


FIG.27

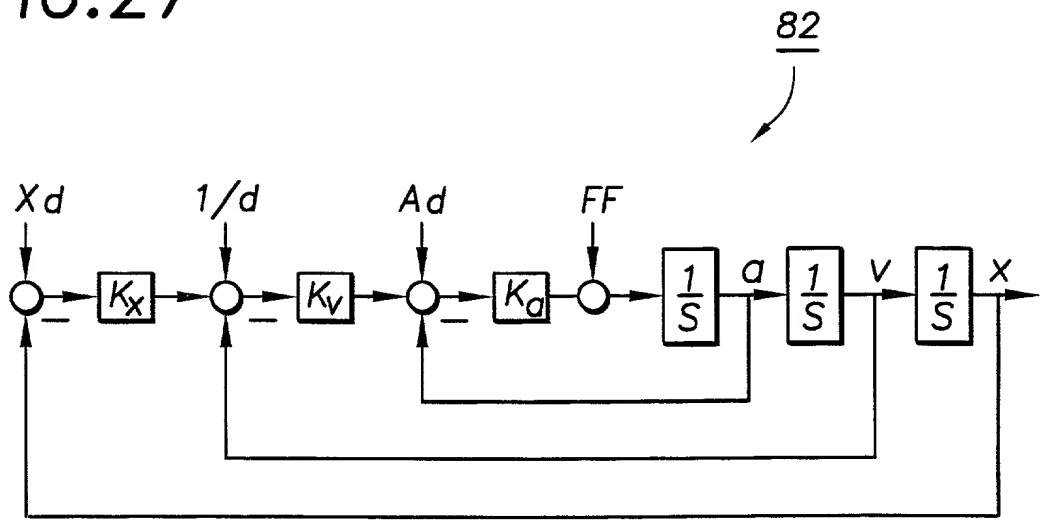
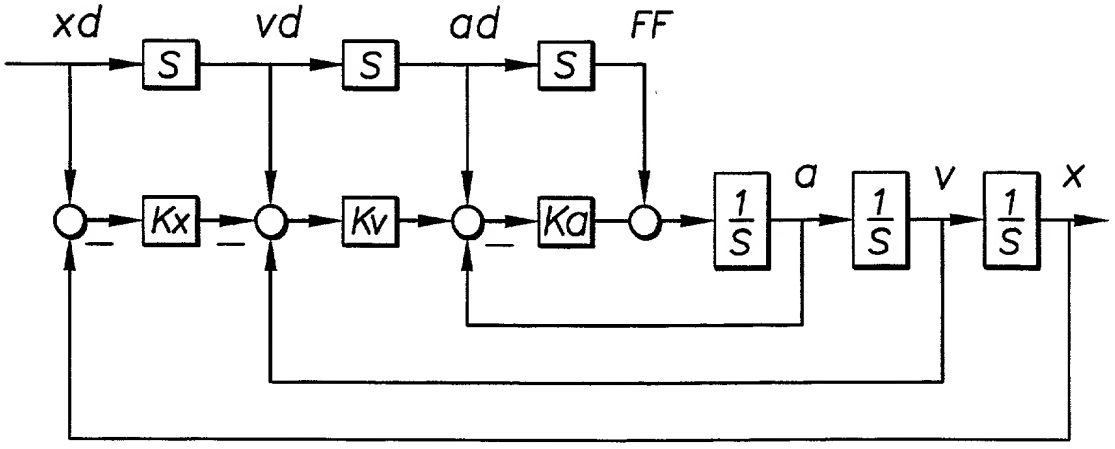


FIG.28



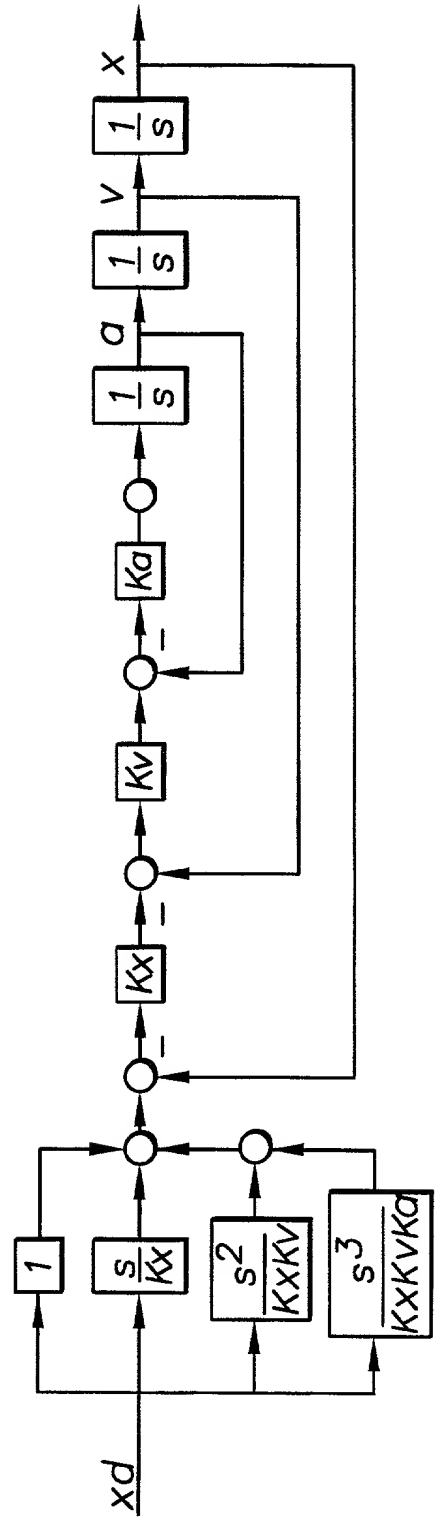

xd
1
s/Kx
s²/KxKv
s³/KxKvKa
Kx
Kv
Ka
1/s
a
v
x

FIG.29

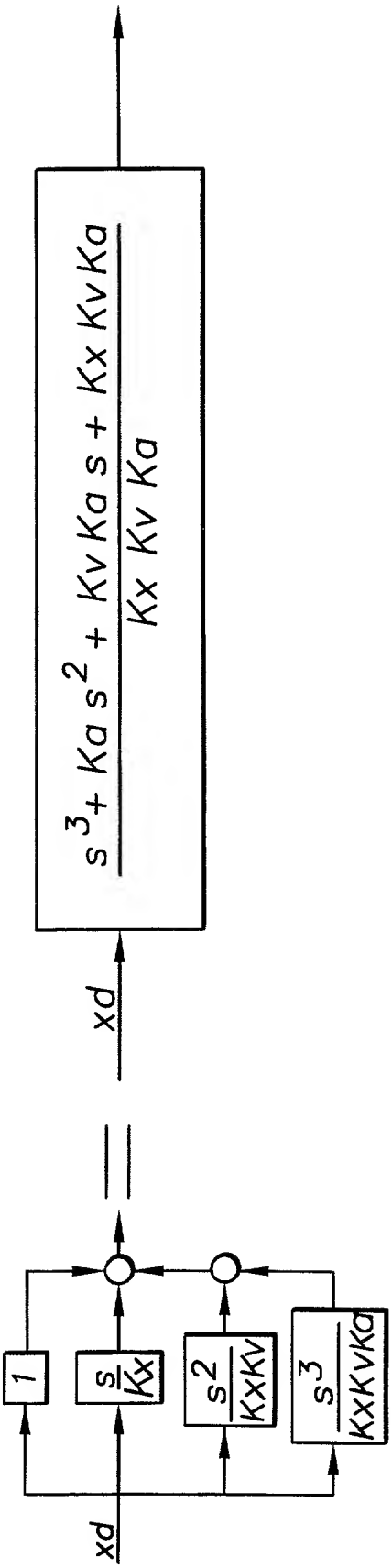

xd
1
s/Kx
s²/KxKv
s³/KxKvKa
s³+ Ka s² + Kv Ka s + Kx Kv Ka
Kx Kv Ka

FIG.30

FIG.31

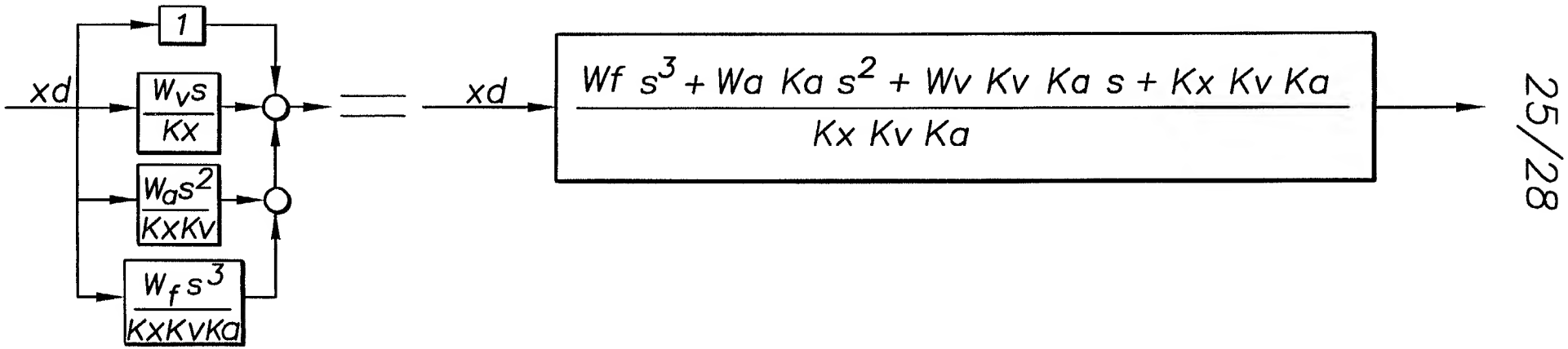


FIG. 32

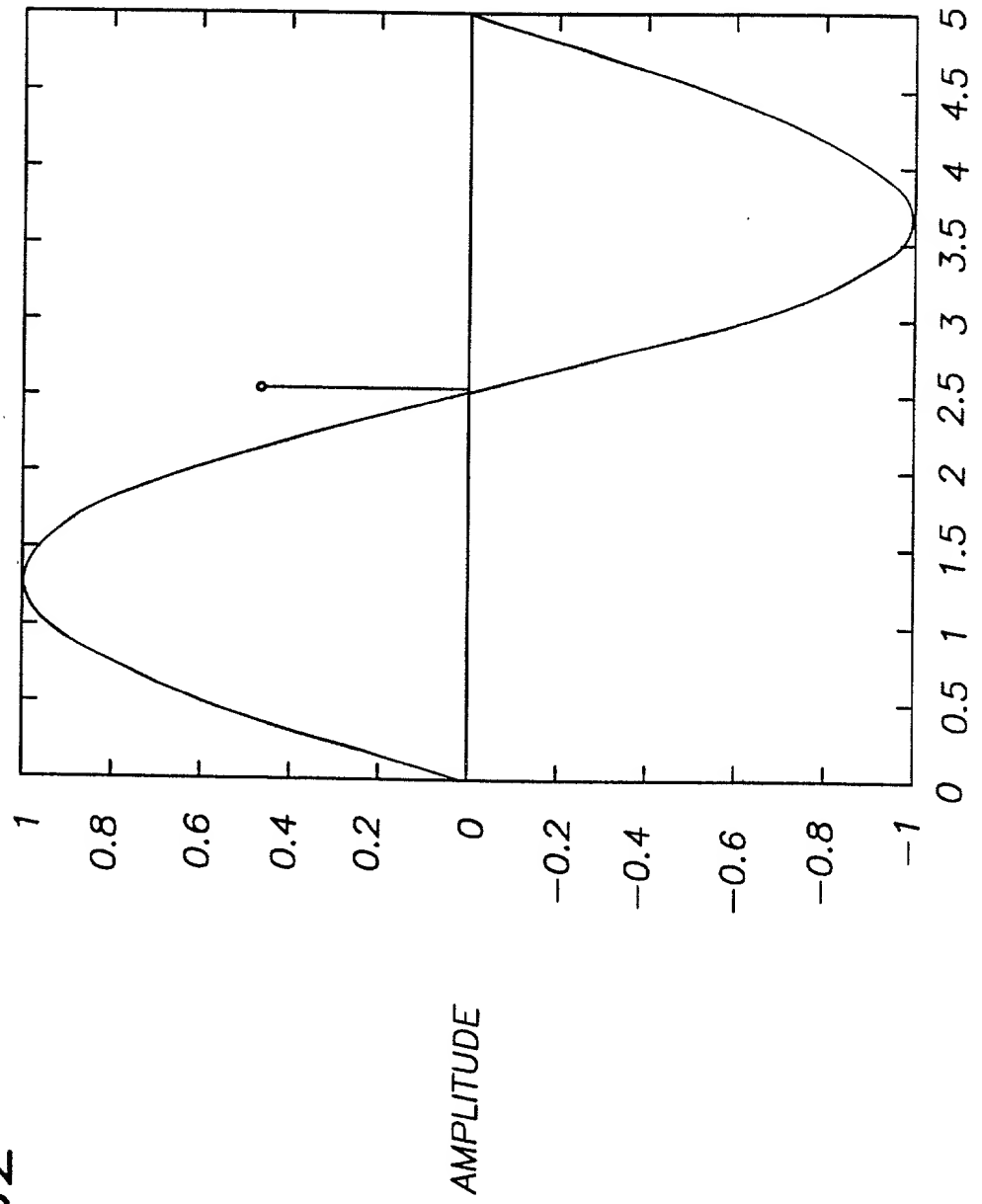

1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
AMPLITUDE
0
0.5
1
1.5
2
2.5
3
3.5
4
4.5
5
TIME (sec)

FIG.33

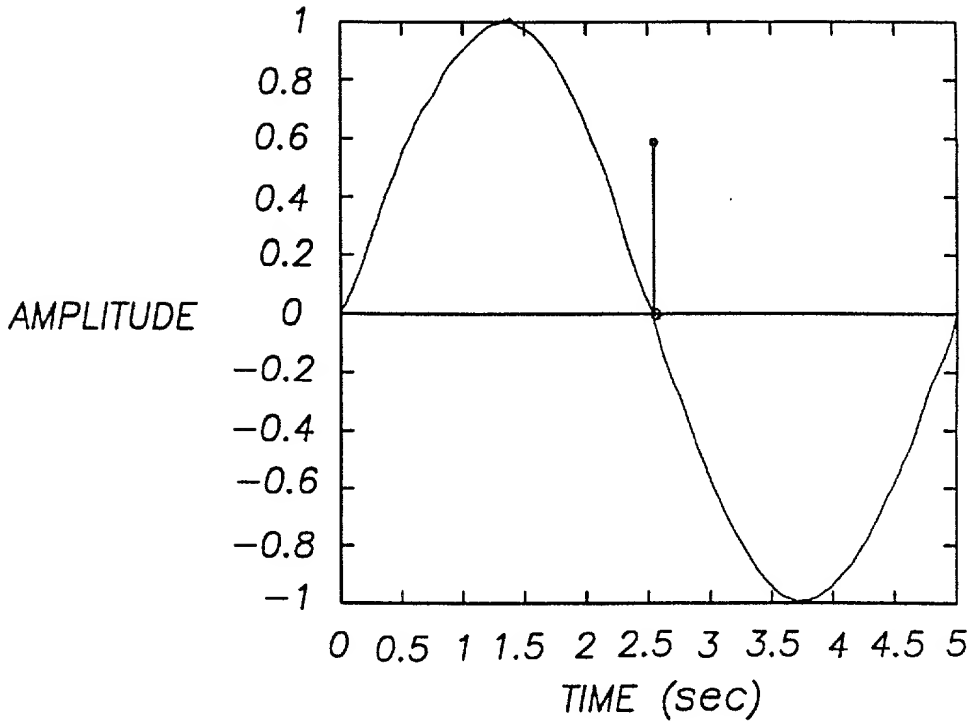

AMPLITUDE
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
0 0.5 1 1.5 2 2.5 3 3.5 4 4.5 5
TIME (sec)

FIG.34

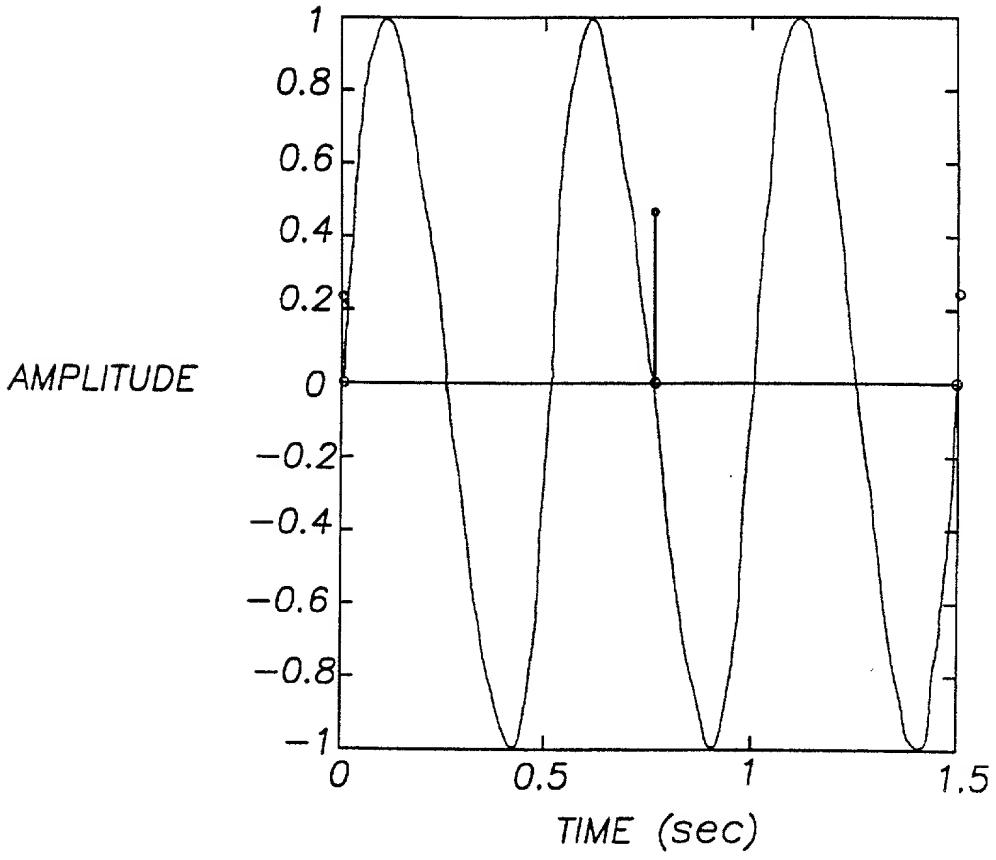

AMPLITUDE
1
0.8
0.6
0.4
0.2
0
−0.2
−0.4
−0.6
−0.8
−1
0 0.5 1 1.5
TIME (sec)

FIG.35